REMARKS

Applicants appreciate the detailed examination evidenced by the Office Action mailed April 19, 2007 (hereinafter "Office Action"). Claims 1, 3-10, 12-19, 21-28, 30-32, 34 and 35 remain pending in the application after entry of this amendment. Applicants respectfully provide amendments to the claims in which Claims 1, 10, 19, 21-28 and 32 are amended. Applicants have further provided remarks herein detailing why the cited references do not disclose all the recitations of the pending claims. Applicants respectfully submit that the pending claims are patentable for at least the reasons described herein.

Drawing objections are overcome

The Office Action states that Figures 2, 3 and 5 should be designated by a legend such as - Prior Art - because only that which is old as illustrated. Office Action, page 2. Applicants respectfully submit that corrected drawings corresponding to Figures 2 and 3 are provided herein. Regarding Figure 5, applicants submit that illustrations corresponding to I, II and III represent cross-sectional magnetic field distribution in characteristic magnetic field directions consistent with some embodiments of Applicants' invention. In this regard, applicants respectfully submit that Figure 5 is not properly designated as Prior Art. Applicants respectfully request that rejections to the drawings be withdrawn based on the submitted corrected drawings and the remarks herein.

Claims 1, 10, 19, 28, and 32 are patentable under 35 U.S.C. §112, second paragraph

The Office Action states that Claims 1, 10, 19, 28 and 32 are rejected under 35 U.S.C. §112, second paragraph as being incomplete for omitting essential steps, such omission amounting to a gap between the steps and that the omitted steps are: the claimed inventions are not used to achieve what the application recited in the preamble (estimating characteristics of plasma). Office Action, page 2. Applicants note that "generating a generalized model" does constitute "estimating characteristics of a plasma." However, to further clarify the nature of the claimed subject matter, Claims 1, 10, 19, 28 and 32 are amended to include language from the preambles of the respective claims. Accordingly,

Applicants respectfully request that the rejections of Claims 1, 10, 19, 28 and 32 under 35 U.S.C. §112, second paragraph be withdrawn.

The Office Action states that Claims 1, 10 and 19 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Office Action, page 3. Specifically, the Office Action states that the claimed invention recites "a plurality of magnets move with respect to the reaction chamber," and that the Examiner is not clear whether the magnets are rotating around the chamber or rotating in place. Office Action, page 3. Applicants respectfully submit that Claim 1 includes language that defines the movement of the magnets. For example, Claim 1 further states that the magnets "move with respect to the reaction chamber." Therefore, the magnets necessarily do not rotate in place (i.e., around individual axes). Thus, Applicants respectfully submit that the alleged ambiguity is absent. Accordingly, Applicants respectfully request that the indefiniteness rejections of Claims 1, 10 and 19 under 35 U.S.C. §112, second paragraph, be withdrawn.

Claims 19 and 21-27 are patentable under 35 U.S.C. §101

The Office Action rejects Claims 19 and 21-27 under 35 U.S.C. §101 as being directed to nonstatutory subject matter since the claims as a whole are drawn to computer code per se and do not provide for a practical application, as evidenced by lack of physical transformation or a useful, tangible and concrete result. Office Action, page 3. Applicants respectfully submit that Claims 19 and 21-26 are amended to revise the form of the claims. Moreover, Applicants respectfully submit that the generalized model of the plasma, as recited in Claims 19 and 21-27, represents the requisite useful, tangible and concrete result as required under §101. Regarding the useful requirement, a generalized model of the plasma may be used to estimate an etching rate for a wafer positioned in the chamber. Specification, page 4, lines 1-2. A generalized model of the plasma is tangible in that the result is not abstract and sets forth a practical application in semiconductor manufacturing processes. Further, a generalized model of the plasma produces a concrete result in that the result is substantially repeatable and is not unpredictable. Accordingly, Applicants respectfully request that the §101 rejection be withdrawn.

Independent Claims 1, 10, 19, 28, and 32 are patentable over Chung et al.

Claims 1, 3, 5-10, 12, 14-19, 21, 23-28, 30-32 and 34-35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over "Integrated Simulation of Equipment and Topography for Plasma Etching in the DRM Reactor," by W.Y. Chung, J.J. Oh, T.K. Kim, J.K. Shin, K Seo, Y.K. Park, and J.T. Kong, 2000 IEEE (hereinafter "Chung") in view of "Permanent magnet Configuration for Magnetic-Field-Enhanced RIE," by J.P. Yonnet and A. Picard, IEEE 1990 (hereinafter "Yonnet"). Applicants respectfully traverse the rejection as Chung and Yonnet, alone or in combination, do not disclose or suggest all of the recitations of Claims 1, 10, 19, 28 and 32.

Claim 1, recites, in part:

> generating a generalized model of the plasma from the computed plasma characteristics for the plurality of cross-sections,
>
> wherein the plurality of moving magnets rotate about an axis of rotation, and wherein ***each of the plurality of cross-sections includes the axis of rotation***.

(*Emphasis added.*) Claims 10, 19, 28 and 32 include similar recitations. The Office Action asserts that:

> Chung discloses a plurality of magnets that rotates around the reaction chamber (See: Introduction). However, Chung fails expressly to disclose wherein the plurality of moving magnets rotate about an axis of rotation, and wherein each of the plurality of cross-sections includes the axis of rotation. Yonnet discloses wherein the plurality of moving magnets rotate about an axis of rotation, and wherein each of the plurality of cross-sections includes the axis of rotation (See: Fig.7-Fig.12; "IV. Rotating Magnet Systems" of page 291).

Office Action, pages 4-5.

Applicants note that the cited portion of Yonnet describes moving magnets such that "the magnet rotation axes are parallel, in the same plane and their spacing is 'E'" and that "all the magnets are driven synchronously at the same uniform rotation speed." Yonnet, IV. Rotating Magnet Systems. Further, in the cited portion, Yonnet appears to describe the frequency dependent torque relationship to the speed of the driving motor. However, Yonnet does not disclose or suggest computing plasma characteristics for each of a plurality of cross-sections of the reaction chamber such that each of the plurality of cross-sections includes the

axis of rotation, as recited in Claim 1. Accordingly, Yonnet does not provide the teachings alleged in the office action in the combination of Chung and Yonnet does not teach or suggest all the recitations of Claim 1. For at least the foregoing reasons, Applicants submit that Claim 1 is patentable. Applicants submit that independent Claims 10, 19, 28 and 32 are patentable for at least similar reasons.

No new subject matter

Applicants respectfully submit that the amendments to the claims are made to address claim form and include no new matter. For this reason, Applicants submit that a new search is not necessary. In this regard, Applicants respectfully request that any rejection based on new references be made non-final.

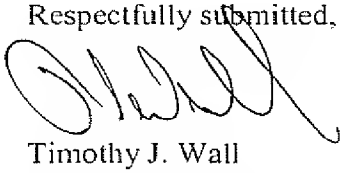
The Dependent Claims Are Patentable

Applicants submit that the dependent claims are patentable at least by virtue of the patentability of the various ones of independent Claims 1, 10, 19, 28, and 32, from which they depend.

Conclusion

Applicants submit that the objections to the specifications and claims have been overcome, and that the claims are patentable for at least the reasons discussed above. Applicants respectfully request allowance of the claims and passing of the application to issue in due course. Applicants encourage the Examiner to contact the undersigned by telephone to resolve any remaining issues.

Respectfully submitted,



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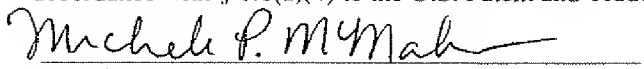

Michele P. McMahan
Date of Signature: August 13, 2007